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Bangladesh

Biotechnology

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Report Highlights:
The agricultural biotechnology sector in Bangladesh is at a nascent stage but the country is moving toward the adoption of biotechnology for crop improvement and enhancement of the country's food security. In July 2006, the National Taskforce on Biotechnology Development (NTFBD) approved the National Biotech Policy that allows bioengineering research, and opens up new possibilities of innovation and development involving living cells. On May 10, 2008, the Bangladesh Department of Environment issued the Biosafety Guidelines of Bangladesh, and the National Biosafety Framework.

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SECTION I: EXECUTIVE SUMMARY

The Bangladeshi agricultural biotechnology sector is at a nascent stage of development, but the country is moving toward the adoption of biotechnology to improve crops and to enhance the country's food security. Bangladesh officially prohibits the importation (for commercial use) of agricultural products containing bioengineered products. On July 19, 2006, the National Task Force on Biotechnology Development (NTFBD) approved a policy framework and guidelines for biotechnology. On May 10, 2008, the Bangladesh Department of Environment officially unveiled the Biosafety Guidelines of Bangladesh, and the National Biosafety Framework. Although Bangladesh has signed and ratified the Cartegena Protocol on Biosafety, it has not yet developed a legal framework to implement the provisions of the Protocol.

The absence of a concrete biotech regulatory system could pose a barrier for the export of U.S. agricultural commodities to Bangladesh. The lack of effective intellectual property rights legislation is an impediment to the development of the biotechnology sector. There is a general recognition within Bangladesh's scientific and policy community that biotechnology offers a tool to provide food security to the country's growing population. Bangladesh needs bilateral and multilateral assistance in order to build capacity and develop human resources to support and implement the biotechnology policy and guidelines; and to develop a transparent and science-based regulatory system.

SECTION II: BIOTECHNOLOGY TRADE AND PRODUCTION

The Technical Committee on Crop Biotechnology in the Ministry of Agriculture has approved the import of some biotech products for contained trials; these include Golden Rice, fruit- and shoot-borer resistant Bt eggplant, late blight resistant potato, insect resistant Bt chickpea, and ring spot virus resistant Papaya. After successful completion of the contained trials, Bt. eggplant is currently under limited field trials at Bangladesh Agricultural research Institute (BARI) regional stations; while transgenic potato is waiting government approval for such trials. The next phase for these biotech trials will be the approval for multi-locational trials in farmers' fields.

Bangladesh is a food aid recipient country (mostly wheat), and is likely to remain so over the coming years. Commercial imports include wheat, rice, cotton, soybean oil (mostly from Brazil), soybean meal (from India), palm oil, and corn (from India). Crops grown using imported seeds include maize, cotton, potato, and some winter vegetables such as cabbage, cauliflower, tomato, carrot, none of which are reported to be bioengineered.

SECTION III: BIOTECHNOLOGY POLICY

Bangladesh has a National Biotech Policy, but is yet to establish a regulatory framework for agricultural biotechnology. Since the regulatory system is not yet in place, no biotechnology crop has been approved for commercial cultivation. There are no separate regulations governing the labeling of biotechnology products.

The Ministries of Agriculture (MOA), Science and Information Technology (MOSICT), and Environment and Forest (MOEF) are jointly responsible for the development of a biotechnology policy and regulatory framework. In 2000, "Biosafety Guidelines" were developed under the leadership of the MOSICT, and were notified by the government in 2001.

The MOEF formulated a modified version of the "Biosafety Guidelines of Bangladesh" which was notified on January 02, 2008. The Biosafety Guidelines contain standards and codes of

practice related to the “risks” associated with the environmental release of bioengineered products. They also propose a decision-making framework that allows experimental field testing based on (1) the testing agency’s familiarity with plant and genetic modification, (2) the ability to confine the bioengineered plant, and (3) the perceived environmental impact, should the plant escape confinement.

The National Task Force on Biotechnology Development (NTFBD) is the apex body of the five national-level biotechnology committees that address biodiversity, biosafety, crop biotechnology, livestock and fisheries biotechnology, and medical biotechnology. On July 19, 2006, the NTFBD approved the National Biotech Policy prepared by the MOSICT that allows bioengineering research in various sectors such as agriculture, health, industry, etc. The policy emphasizes protecting indigenous community knowledge, collective innovations, and community rights. The policy states that legal measures will be developed to achieve a “balanced” system to protect the interests of the innovators as well as the public.

The Secretary of the MOEF heads the National Technical Committees on Biosafety (NCB). The principal role of NCB is to draft and adopt legislation and measures to ensure the environmentally safe management of modern biotechnological development, including research, and the development, use, and trade in biotechnology products. In 2007, a draft National Biosafety Framework (NBF) was finalized as an outcome of the National Biosafety Development Project in Bangladesh under the United Nations Environment Program/Global Environment Facility (UNEP/GEF) global project on development of national biosafety frameworks in collaboration with MOEF. The Framework provides the basis for future regulation for the management of biotechnology products in Bangladesh. The objectives of the NBF are two fold – provide oversight of the existing systems, and identification of future needs for an effective and transparent legislation and administrative system.

On May 10, 2008, the Bangladesh Department of Environment officially released the ‘National Biosafety Framework’ along with the ‘Biosafety Guidelines of Bangladesh’. Bangladesh is a signatory to the Cartagena Protocol on Biosafety (CPB). It ratified the protocol in 2004, but rules implementing the Protocol have not yet been formulated. Citing the CPB, the "Biosafety Guidelines" state that an Advance Informed Agreement (AIA) shall be applied by the government prior to the first intentional trans-boundary movement of bioengineered products for intentional introduction into the country’s environment. Bangladesh is also a signatory to the Convention on Biological Diversity, which it has ratified.

Bangladesh currently lacks effective legislation to protect intellectual property rights in plant varieties. A draft of the Plant Variety Protection Act, which includes as its goals the conservation of biodiversity and farmers’ rights to seeds of indigenous crop varieties, has been under review by various stakeholders for more than six years.

SECTION IV: MARKETING ISSUES

Currently, Bangladesh does not allow commercial imports of biotech food and agricultural products. Bangladeshi importers, retailers, and consumers appear unconcerned and/or unaware of the possible presence of biotech traits in imported agricultural commodities. There is no mechanism to detect the presence of biotech traits in imported food products. Price, taste, and religious considerations are the major determinants of consumers' food choice.

There is a general political consensus in favor of biotechnology in Bangladesh. However, there is a concern among some scientists, non governmental organizations (NGOs), and politicians about the safety of biotech products, particularly in the context of preserving Bangladesh's biodiversity. Some groups are concerned that a lack of monitoring of biotechnology crops could lead to cross-pollination of existing open-pollinated crops with bioengineered varieties. There is also the perception that the new technology may be detrimental to the farmers' rights to seeds, because the seed companies, who are mostly multinationals, may establish "ownership" of the seeds of crop varieties under cultivation. Currently, Bangladesh lacks the infrastructure to adequately administer technical procedures for assessing biotech products. The enforcement of intellectual property rights due to an underdeveloped judicial system is also a constraint. The lack of purchasing power in the farm sector due to the predominance of small and marginal farmers may also restrict the wider use of biotech seeds, which farmers believe are higher priced vis-à-vis non-biotech varieties. In several public and private sector institutions there is a fair amount of commercial in-vitro propagation of various crops like potato, banana, orchids, and other fruits and ornamental plants. Other than a few research activities in public sector universities and institutions, investment for development of bioengineered agricultural products is virtually absent in Bangladesh.

Bioengineered seeds for planting may experience difficulty gaining market acceptability, unless apprehensions about multinational seed companies are addressed and prices become more affordable. Nonetheless, a large majority of scientists support biotech product development and importation, provided their food safety and environmental impacts are properly assessed, and field-testing is conducted under appropriate bio-safety guidelines.

SECTION V: CAPACITY BUILDING AND OUTREACH

USDA supports several Bangladeshi universities' agricultural biotechnology research and capacity building activities. USAID funded the South Asia Biosafety Program (SABP) in Bangladesh which ended in September 2006. USAID is currently funding the Agricultural Biotechnology Support Project (ABSP II) which is expected to be completed by December, 08.

In March 2007, USDA and the Bangladesh Agricultural University jointly organized a "Project Review Workshop" to assess the outcomes of the biotech agricultural research projects financed from a local currency fund generated by USDA commodity grants to the GOB. Though these projects involve mostly academic research, the outcomes of these projects would guide and support future biotech research in Bangladesh along with development of human resources.

At the multilateral level, the United Nations' Food and Agriculture Organization (FAO) is working with the Bangladeshi Government to develop policy guidelines and regulatory documents under a project called "Capacity Building in Biosafety of GM crops in Asia." The FAO in May 2004 prepared a document called "Assessment of Utilization and Potential of Biotechnological Advancement for Agriculture Development in Bangladesh," wherein

recommendations were made for institutional and framework-building for agricultural biotechnology in Bangladesh.

The Ministry of Environment and Forest (MOEF), which serves as the lead ministry for biosafety issues, organized a series of biotech awareness workshops in major cities in Bangladesh in 2006-07. Recently (June 7-8, 2008) there was a two day international conference on "Biotechnology for Food, Renewable Energy and Poverty Alleviation."

SECTION VI: REFERENCE MATERIAL

Revised "Biosafety Guidelines" - www.doe-bd.org/biosafety_guidelines.html